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RECORD OF ORAL HEARING

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS

AND INTERFERENCES

Ex parte AKIHIKO TANIGUCHI,
KAZUMA GOTO,
MASAYA FUJIOKA,
SHUNICHI HIGASHIYAMA

Appeal 2008-2268
Application 10/643,291
Technology Center 1700

Oral Hearing Held: May 20, 2008

Before BRADLEY R. GARRIS, THOMAS A. WALTZ, and
ROMULO H. DELMENDO, Administrative Patent Judges

ON BEHALF OF THE APPELLANT:

Joseph Treloar, Esquire
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MS. BOBO-ALLEN: Calendar no. 37, appeal no. 2008-2268, Mr. Treloar.

JUDGE GARRIS: Thank you. Good morning again, Mr. Treloar.

MR. TRELOAR: Good morning, Your Honors.

JUDGE GARRIS: As you heard me earlier, the gentleman in the back, on your left, is Judge Robertson observing this hearing today. And would you please introduce the gentleman on your right?

MR. TRELOAR: This is the gentleman who just spoke. He requested to sit in on, on my hearing.

JUDGE GARRIS: So you're trading places.

MR. TRELOAR: Yes.

MR. BERKHIMER: Yes, sir, a learning experience.

JUDGE GARRIS: I'm sorry, I didn't recognize you. It's dark in that back corner there.

MR. BERKHIMER: That's all right, Your Honor.

JUDGE GARRIS: Good to see you again. Okay, Mr. Treloar, as you know, you have 20 minutes. Please begin.

MR. TRELOAR: Thank you very much, Your Honors, for taking this time to meet with me. Basically, in, in this case, the main contention is now regarding claim 1. As you've seen through the course of, of the briefs, the examiner has changed some of his -- or, her rejections and indicated that certain claims that had been rejected are now only objected to as depending upon rejected-based claims. And so, at this point, we are only really concerned with claims 1, 3, and 7, as far as the anticipation rejection. In particular, my arguments go to the, the independent claim, which is independent claim 1.

And independent claim 1, in particular, states that the ink needs to have an anionic self-dispersing coloring agent, as well as a surfactant with a cationic moiety and a nonionic moiety, and that the ink also has a curve, and the specifications of this curve are laid forth in independent claim 1. In particular, this is a curve that represents the change in the surface tension of the entire ink with respect to the concentration of the surfactant in that ink, and that this curve must have one inflection point, a first local maximum, and a second local maximum. In addition, claim 1 specifically states that the concentration of the surfactant contained in the ink must be higher than a concentration for the surfactant which corresponds to the first local maximum point on that curve.

To claim 1, the examiner has argued that MOMOSE, which is the only reference cited, discloses a self-dispersing coloring agent. And after we had argued that one of the important features of claim 1 is the interaction of the anionic self-dispersing coloring agent to the cationic surfactant, it appears that the examiner then argues that even though MOMOSE does not specifically teach an anionic -- or teach that the self-dispersing coloring agent is anionic, it does teach that you could have a carboxyl group or a sulfone group attached to the self-dispersing coloring agent, and that, therefore, since our specification says that you can also have these groups, in particular the carboxyl group, since the specification actually does not talk about a sulfone group but rather a sulfate group, there is overlap, though, with the carboxyl group. However, the carboxyl group does not relate at all to the anionic property of the coloring agent. And the examiner has not been able to point --

JUDGE DELMENDO: Why, why not?

MR. TRELOAR: What?

JUDGE DELMENDO: Why not? It teaches a salt thereof, in column 3, line 50.

MR. TRELOAR: Let me see. Do I have the reference already out? No, I need to get the reference out. Brief on appeal, appeal brief -- because you're bonding the hydrophilic functional group to the ink, and that doesn't mean that the ink itself is going to be cationic -- I mean, anionic. I would direct you to a portion of our specification that, that discusses that, which is -- actually, page 7, which is the portion that, that the examiner cites of our specification. It's the -- I believe the second sentence down is where the examiner's pointing to where that we talk about the self-dispersing type, microparticulate coloring agent has a functional group which gives the dispersability to the pigment, and that this functional group could include a sulfate group and, and a carboxyl group, for example. However, as you'll see, the very next sentence specifically states that as for the self-dispersing type microparticulate coloring agent itself, the surfaces of the particles themselves are charged with a negative charge.

JUDGE DELMENDO: So, so my question to you is, why isn't the salt of the carboxylate acid group, why doesn't meet this description at page 7 of the spec?

MR. TRELOAR: Because -- well, aside from the -- at least my reading of this, the salt, it's a salt before it bonds with -- or, before it interacts with the pigment. And then once it bonds with the pigment, it may very well lose any anionic property that it has by, by bonding with the ink itself.

JUDGE DELMENDO: Well, how do you know that?

MR. TRELOAR: I don't know that for certain, however, there's no indication that, you know, it would necessarily maintain its anionic property in the ink. Because the ink itself is separate from this functional group, and the functional group can be attached, but it doesn't necessarily follow that when you attach this, this salt, which is then no longer a salt because it's now attached to another chemical compound --

JUDGE DELMENDO: All right. Okay.

MR. TRELOAR: -- that's -- I mean, it's mainly that it's, it's not inherent, as far as I can see. I couldn't see anything that would specifically -- - or, would necessitate that the ink would have the anionic charge. And, and that, I guess, would be our first point of disagreement with the examiner.

The next point of disagreement about which I would like to speak would be the curve, which the examiner says is inherent in MOMOSE. This curve is specific to, to an ink, and while an ink would inherently have a curve, the ink of MOMOSE would not necessarily have the curve which is stated in claim 1. This curve is epitomized by figure 1 of our application.

JUDGE DELMENDO: Counselor --

MR. TRELOAR: Yes?

JUDGE DELMENDO: -- is the organic amine in the reference a surfactant?

MR. TRELOAR: Is the what in the reference?

JUDGE DELMENDO: The tertiary amine of the reference, do applicants concede, or, or do they know whether this is a surfactant?

MR. TRELOAR: Whether formula A, compound A of MOMOSE, is that the one?

JUDGE DELMENDO: Yes.

MR. TRELOAR: Has made present knowledge --

JUDGE DELMENDO: Because I notice that you, you never quite argued that this is not a surfactant with a cationic moiety or a nonionic moiety. So, I'm, I'm presuming that applicants are conceding that it does have an anionic -- I'm sorry, a nonionic moiety and a cationic moiety and it is a surfactant.

MR. TRELOAR: Yes, I, I, I do believe that, that we, we are not, we are not debating that the, the amine from MOMOSE --

JUDGE DELMENDO: Okay.

MR. TRELOAR: -- has the cationic moiety and the nonionic moiety. In, in, in particular, if you look at, you know, claim 3, we say where the cationic moiety is nitrogen, which compound A does, in fact, have, and an ethylene oxide, which is, I believe, one of the possibilities of --

JUDGE DELMENDO: Okay.

MR. TRELOAR: -- one of the attachments. So, so we're not so much arguing that, it's just that the curve itself could be -- as you've seen in the figures of the current application, it doesn't necessarily have to have that inflection point. It might have no inflection point whatsoever and have no maximums or no minimums.

JUDGE DELMENDO: So, why wouldn't this organic amine of the reference not have this inflection point characteristic?

MR. TRELOAR: The reason being is that it's not -- this curve is not -- and, and it seems to be where we respectfully believe that the examiner has not quite -- has misinterpreted things. In particular, the curve is not just a property of the, of the surfactant, it's a property of the ink itself as a whole,

and it's -- specifically, the inflection point relates to how the surfactant interacts with the anionic self-dispersing coloring agent, and that's why the curve, as stated in claim 1, is -- shows a relationship of the change of surface tension of the ink as a whole, not, you know, of the surfactant, but of the ink of a whole as the amount of surfactant is increased.

JUDGE DELMENDO: But, but please help me out. What, what, what limitation in this claim 1 is there that would specify the particular relationship that you're talking about between the ink and -- ink as a whole and, and the surfactant that would make this inflection point curve unique in the applicants' claimed invention?

MR. TRELOAR: I'm, I'm sorry, I might not have understood. Could you repeat?

JUDGE DELMENDO: In other words, it's not clear to me what differences structurally there are between the claimed invention and the prior art that would result in any -- the claimed invention giving you that inflection point characteristic. So, what in terms of structure in the actual compounds that are present in the claimed invention relative to the prior art can you identify that would result in this unique inflection point?

MR. TRELOAR: Well, one of the things is the anionic self-dispersing coloring agent, which, as stated previously, we do not feel that the examiner has proven that MOMOSE discloses. And it's the --

JUDGE DELMENDO: So --

MR. TRELOAR: -- interaction of that -- one thing is the interaction of that with the surfactant. However, even that doesn't necessitate this curve. As our application states, when you have such an ink with the anionic self-dispersing coloring agent and the surfactant with a cationic

moiety and a nonionic moiety, such an ink may have this curve, but it may not, and, and this curve is helpful as being able to indicate which proportions of the surfactant you should include in the ink. So, we had narrowed -- originally, claim 1 did not include the curve. We then narrowed claim 1 to state, well, now we're talking about a subset of these inks that have an anionic self-dispersing coloring agent and a surfactant with a cationic moiety and a nonionic moiety, and that this subgroup is the subgroup which has this specific curve.

JUDGE GARRIS: Well, if that curve is defined, at least in part, by the concentration of your claimed surfactant, what is the actual concentration amount?

MR. TRELOAR: Ah, I'm glad that you asked. The actual concentration amount you can see in claim 1 is the last actual phrase of claim 1, which begins after the final comma, which is where it states that "The concentration of the surfactant contained in the ink is higher than a concentration on the curve corresponding to the first local maximum point."

I guess, to see this more clearly, if you wanted to look at the, the exemplary curve, which is figure 1, what that language translates into when you -- once you have the curve is that it states that the concentration of the surfactant must be greater than the concentration which corresponds to, for example, point 1 in figure 1, where you have a curve and it starts out with the low concentration of the surfactant and the surface tension, and as the surface tension comes down, the surfactant increases in concentration. And what claim 1 states is that we are claiming a concentration that matches up to that first maximum point for that ink.

JUDGE GARRIS: And once again, what would be the numerical value for that concentration?

MR. TRELOAR: The numerical value would differ depending upon which anionic self-dispersing coloring agent was used and which surfactant was used. It's, it's not necessarily the same, as you can see from the examples. I believe it's figures 2 and 3, which correspond to examples, examples 1, 2, 1 and 2, examples 1 and 2 both correspond to figure 2; and example 3 corresponds to figure 3. And as you can see, the inflection points are located in, in different positions, as are the local maximums and local minimums because the components of examples 1 and 2 and 3 are different from one another.

So, you may have two inks that have a -- and so, those are the, those are the determining factors. Which kind of anionic self-dispersing coloring agent do you use, and which surfactant which has a cationic moiety and a nonionic moiety do you use. And for each selection, you will have a different curve, however the curve is important. As explained in the specification, it's not so much an absolute value of the surfactant which is important, but how that surfactant interacts with the anionic self-dispersing coloring agent. And that portion of the specification -- let me find out. It talks about the three points.

Here we go. Twenty-four -- it is page 12 of the specification, paragraph 15, where it talks about in the low concentration area, meaning the area where the concentration of the surfactant is less than that which corresponds to the first local maximum point, that the surfactant tends to coat the surface of the microparticulate coloring agent rather than the surfactant moves to the surface of the liquid ink, and that this is not what we

are looking for. What we're looking for is after that first local maximum point, which is in the middle concentration area. And as the specification describes, in the middle concentration area, the microparticulate coloring agent has been thoroughly coated with the surfactant and that when the concentration of the surfactant is further increased, the surfactant is moved to the liquid ink surface.

This is what we are looking for in the properties of the ink, and that's why we did not specify a particular numeric value, because it's not so much the absolute concentration of the surfactant which is important, but rather the concentration of the surfactant as it relates to the anionic self-dispersing coloring agent and the ink as a whole.

JUDGE GARRIS: While, I think I understand your point, nevertheless, it would be helpful if we had some idea of representative numerical values that are encompassed by the curve you're defining in your claim so that we might then be able to compare these numerical concentration values to what has been disclosed in our reference to MOMOSE. Can you do that for us here?

MR. TRELOAR: Yes.

JUDGE GARRIS: Give us an idea as to whether MOMOSE is used in concentrations for the tertiary amine which do or do not fall within the range embraced by this claim.

MR. TRELOAR: Well, examples, examples 1, 2 and, and 3 give examples of concentrations of the surfactant. And in particular, I believe the surfactant used in example 1 is the ethomeen C-15, which it says -- yes, a surfactant based on Alco amine ethylene oxide adduct. I believe the same surfactant -- yeah, ethomeen C-15 is also used in example 2, and example 3

uses the surfactant ethomeen S-25, and they do give examples there of percentages by weight --

JUDGE DELMENDO: Which are?

MR. TRELOAR: -- of the surfactants. I believe example 1, it's .25 percent by weight, ethomeen C-15. Example 2 is .4 percent by weight, ethomeen C-15. Example 3 is .15 percent by weight, ethomeen S-25. And -- yes.

JUDGE DELMENDO: What about the reference? Look at table 3.

MR. TRELOAR: Let me see, reference table 3. Table 3. What are we looking at? Penetrant --

JUDGE DELMENDO: Alkali agent.

MR. TRELOAR: Kind of alkali agent, there is compound 1, compound 2. When I actually looked at table 3, I wasn't sure whether those were percentages or weight values. Because the examiner hadn't pointed to it, but I did see when I was re-reviewing on Friday, I couldn't tell whether they were, you know, amounts by, by weight as in, you know, milligrams or grams, or if it was percentages.

JUDGE DELMENDO: Well, let me help you out. In column 9, it refers to the amount of the alkali agent as, as -- I'm sorry, not column 9. Where is it?

JUDGE WALTZ: It's in column 4, isn't it?

MR. TRELOAR: Column 4.

JUDGE DELMENDO: No, column 5, column 5.

MR. TRELOAR: Column 5.

JUDGE DELMENDO: It talks about percent by weight.

MR. TRELOAR: Okay. Contained in the ink, formula A or B is --

JUDGE DELMENDO: And it can be as high as, you know, 5 percent, which is well, you know, well within your claimed range, it seems to me.

MR. TRELOAR: Well, it's, it's certainly within -- I would have to admit, it's within the range of examples 1, 2 and 3. However -- yeah, I would have to admit that, however, I would still assert that we disagree that the examiner has proven that there's an anionic self-dispersing coloring agent or that MOMOSE inherently discloses the curve, in particular because the curve is, is dependent upon that anionic/cationic interaction. And even if you have the anionic/cationic, you don't necessarily have the curve. And to prove inherency, it needs to necessarily follow. It's not sufficient that the characteristic or trait may follow. And, and so, applicants respectfully disagree that the examiner has shown that.

JUDGE GARRIS: Sir, you're out of time. Let me just inquire of my colleagues.

Judge Waltz, do you have any questions?

JUDGE WALTZ: No, I don't.

JUDGE GARRIS: Judge Delmendo?

JUDGE DELMENDO: No.

JUDGE GARRIS: Sir, we have no further questions. Thank you very much for helping us with this case today.

MR. TRELOAR: Thank you all very much for taking the time to listen to me.

Whereupon, the hearing concluded on May 20, 2008